

A. Ferraro*, Y. Kim^a, S. Lee^a, B. Kim^a, N. Jo^a, S. Lim^a, S. Lim^a, J. Jang^a, S. Kim^a, X. Serra* and D. Bogdanov*

*Music Technology Group, Universitat Pompeu Fabra, Spain
andres.ferraro@upf.edu

^aKakao Corp., Korea

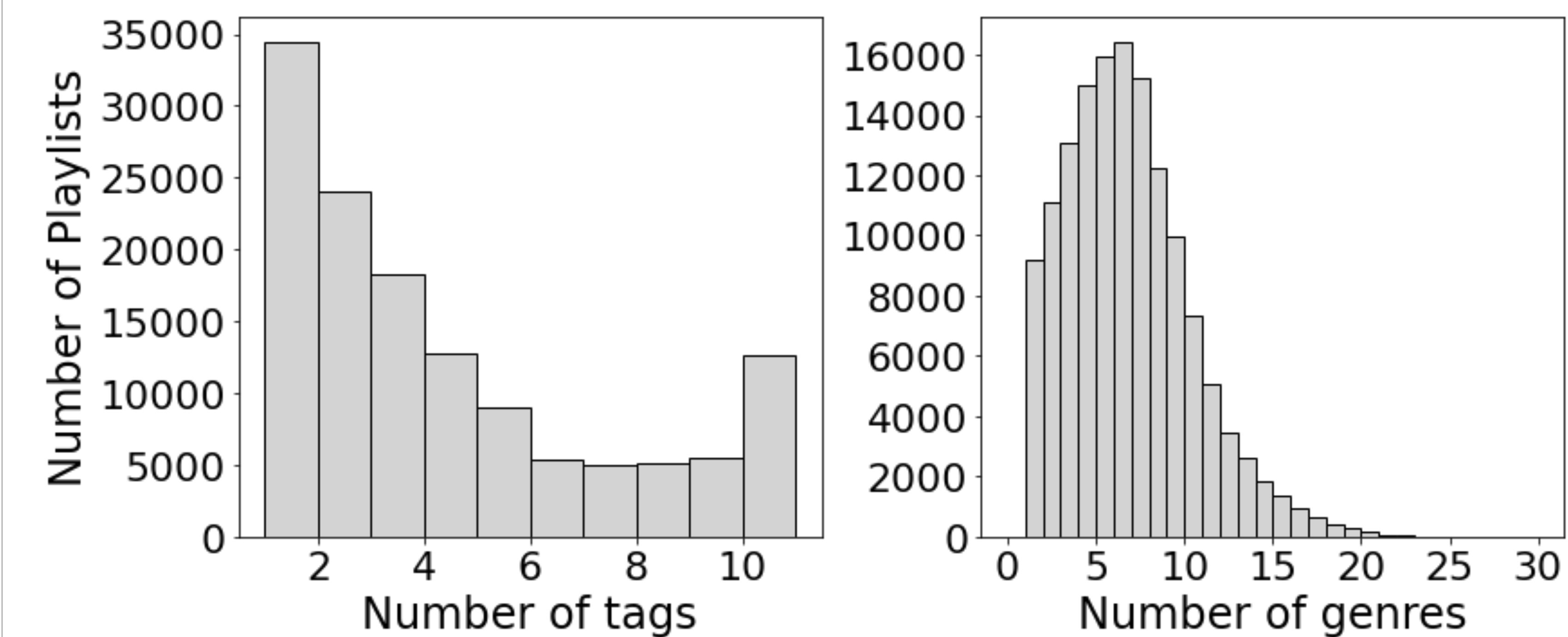
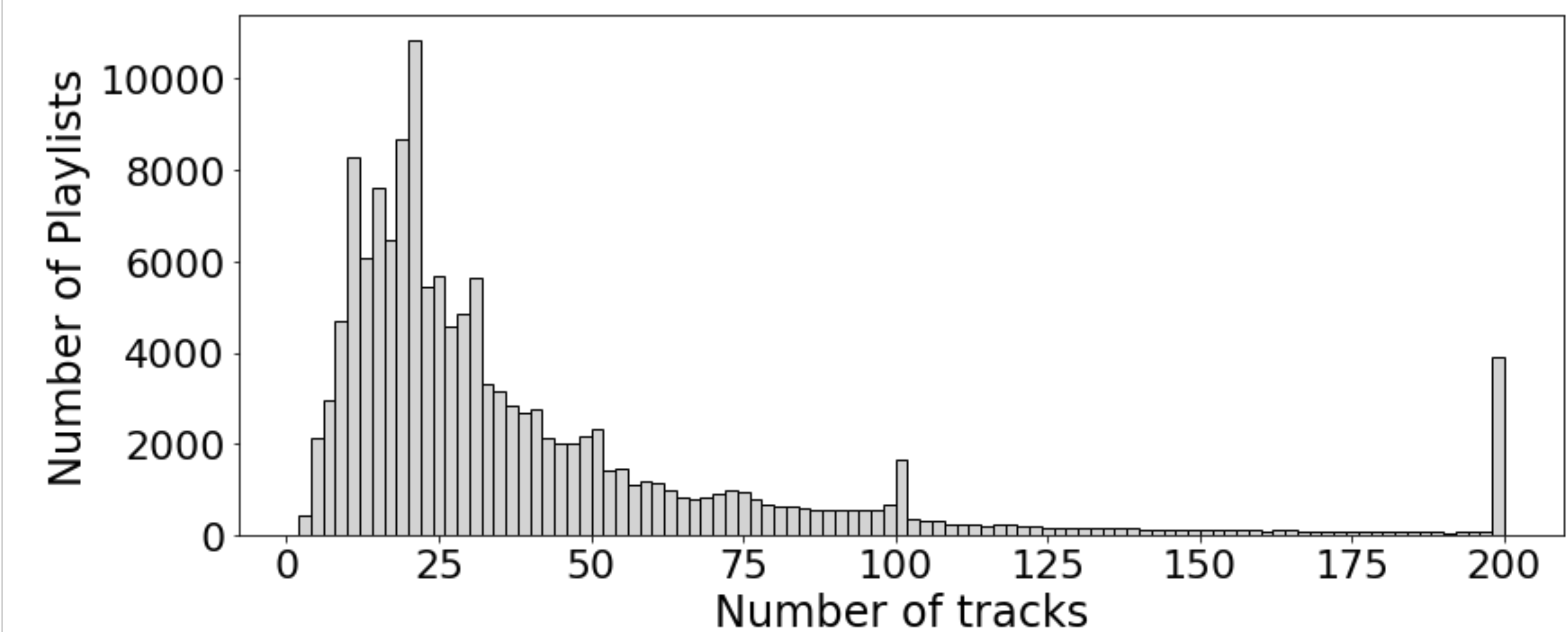
Overview

- Large audio datasets are not public due to **copyrighted commercial music**
- We created **Melon Playlist Dataset**:
 - Collected from **Melon**, the largest streaming service in Korea
 - 649,091 tracks
 - 148,826 playlists
 - 30,652 different tags
- Mel-spectrograms** for 20-50 second track segments. **Total size: 240GB**
- Proposed applications:
 - Sequential recommendation
 - Music classification and automatic tagging
 - Automatic playlist continuation, for which we provide a baseline

Link to the dataset
<https://mtg.github.io/melon-playlist-dataset>



Melon Playlist Dataset

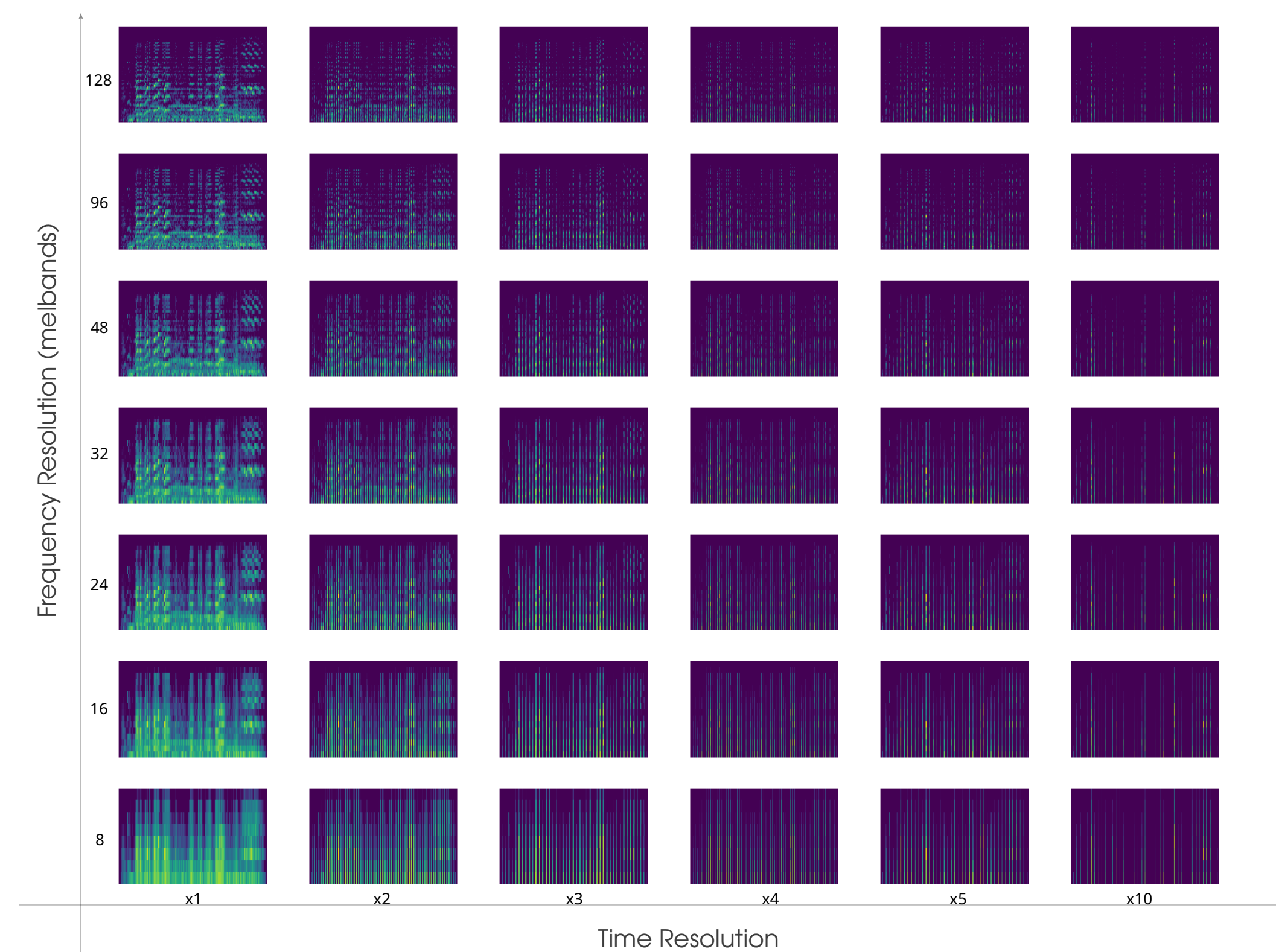


Mel-spectrograms

Previously* we studied multiple configurations

- Sample rate:
 - 12 KHz vs **16 KHz**
- Frame size **512** samples
- Hann** window function
- Number of mel bands:
 - 128, 96, **48**, 32, 24, 16, 8
- Normalization:
 - db** vs log
- Hop size and reduction of time resolution:
 - 256 samples **x1**, x2, x3, x4, x5, x10

* Ferraro et al. Music Auto-tagging Using CNNs and Mel-spectrograms with Reduced Frequency and Time Resolution. EUSIPCO 2020



Automatic playlists continuation

- Goal:** Continuation of playlists with new tracks
- Created new split of the data by different levels of popularity:
 - APC-test-1: 17,042 tracks
 - APC-test-2: 46,069 tracks
 - APC-test-3: 155,68 tracks
 - APC-train: 81,219 tracks and 104,645 playlists
- Trained model to predict CF features using APC-train and evaluated on APC-test:
 - MAP@10, nDCG@10, MAP@200 and nDCG@200

Results

	Method	MAP@10	nDCG@10	MAP@200	nDCG@200
APC-test	Random	0.0000	0.0000	0.0000	0.0002
	Audio	0.0007	0.0014	0.0010	0.0052
	CF	0.0802	0.1338	0.0581	0.1099
APC-test-1	Random	0.0001	0.0003	0.0003	0.0022
	Audio	0.0041	0.0065	0.0063	0.0267
	CF	0.0846	0.1200	0.0979	0.1923
APC-test-2	Random	0.0000	0.0000	0.0001	0.0009
	Audio	0.0022	0.0038	0.0032	0.0136
	CF	0.0490	0.0745	0.0582	0.1291
APC-test-3	Random	0.0000	0.0000	0.0000	0.0002
	Audio	0.0001	0.0001	0.0001	0.0002
	CF	0.0274	0.0416	0.0341	0.0756

